

have everything reversed, but it would take too long to enter into a detailed discussion here, and I have recently sketched my own views on this subject.*

In the Homoptera, the tree is soon divided into two, the right-hand branch comprising the Aphididæ and the Fulgoridæ, the latter giving off the Aleyrodidæ! The left main branch divides into three, (1) Psyllidæ and Coccidæ; (2) Cercopidæ and Cicadidæ; (3) Jassidæ.

Now if there is any group which is apparently compact, it is the Sternorrhynchous Homoptera; yet Handlirsch derives the Aleyrodidæ from the Fulgoridæ, placing both in the same main branch as the Aphidæ, placing all far away from the "Psyllidæ" and the Coccidæ!, while the Cicadidæ are derived from the Cercopidæ, etc.! I do not think that anyone who has studied the Homoptera will agree with this for a moment, the more as it is the wildest theory and is not based on any concrete foundation.

I think that I am therefore justified in declaring invalid, Handlirsch's theories on Hemiptera, ancient and modern, almost in toto.

Further Notes on Hemiptera, Chiefly Hawaiian.

BY G. W. KIRKALDY.

(a) HAWAIIAN HEMIPTERA.

Nesopleias artemisiae sp. nov.

♂ Yellowish testaceous; the tegmina (except a broad basal band of testaceous) black. The abdomen is varyingly marked with blackish, and slightly also above, with yellowish.

♀ Pale yellowish testaceous, a little yellower on the abdomen in part, and sometimes the abdomen is a little marked with black.

In structure, this species is very like the species on *Dubautia*, but the tegmina are longer (reaching to, or a little beyond, the apex of the abdomen). The genitalia (♂) are somewhat on the plan of *Neososydræ raillardiae*, but the pygophor is more elongate, when viewed end-on, the genital styles are narrower basally, the interior emargination extending from the base to the apex.

Length: ♂ scarcely 2 mill.; ♀ 2½ mill.

Hab.: Oahu, Waianae Mountains, 2,000 feet, on *Artemisia australis* (Swezey, Fullaway and Kotinsky).

* Canad. Ent., XLII, pp. 83, 84 (1910).

EPELYTES gen. nov.

This genus belongs to the tribe Rhyparochromini of the Family Mydodochidae, and is probably allied to *Polycrates*, though approaching *Entisberus* in general habitus.

Head a little longer than its width between the eyes, suddenly triangular in front of them; eyes somewhat remote from the pronotum, say about one-third of the length of an eye, prominent, rounded exteriorly. Bucculae nearly percurrent, not prominent. Head between eyes slightly narrower than the apical margin of the pronotum, but, with the eyes, much wider than the latter, though narrower than the middle of the fore lobe. Antennae inserted close to the eyes, just at the sudden narrowing of the head, first segment reaching a little beyond the apex of the vertex; second segment of the labium longer than the third. Pronotum longer than its width, slightly constricted medially, the lobes being subequal in length; collar very indistinct, consisting of an obscure depression anteriorly. Fore lobe slightly roundedly diverging, hind lobe the same, the hind margin not twice as wide as the fore margin (of the pronotum); the lateral margins of the pronotum are carinate, very slightly laminate at the constriction; the shape of the pronotum is thus not unlike that, apparently, of *Entisberus*, except that the lateral margins of the hind lobes are much less divergent. Scutellum subaequilateral, shorter than the claval commissure. Tegmina slightly, but distinctly, constricted in line with the hind angle of the scutellum, the exterior margin acute, reflexed; clavus with three rows of punctures, the inner two a little irregular; corium punctured exteriorly, smooth almost entirely interiorly. Membrane with one straight and three sinuate longitudinal veins. Fore femora incrassate, with three small and several minute spinelets beneath. Fore tarsi curved. Head, pronotum and scutellum punctured, tegmina deeply and prominently so. The pronotum is slightly, the tegmina strongly, shining, as also the urosternites, etc.

E. drapetes sp. nov.

♀ Black; first three segments (4th lost), of the antennae, the labium, etc., fulvous, coxae and the extreme apices of the antennal segments darker. Clavus and extreme base of corium yellowish-brown, the former a little infusate apically; punctures dark. Corium blackish, a large creamy spot (with dark punctures) near the postero-lateral angle. Membrane olivaceo fuliginous. Second segment of the antennae more than twice as long as the first, and about half as long again as the third. Labium reaching very nearly (or quite) to the middle coxae, first segment not quite reaching to the base of the bucculae. Tegmina almost reaching to the apex of the abdomen, which is subtruncate dorsally. Tarsi 3-segmentate, the first segment the longest, the second very short. Apical margin of the 7th urosternite roundly emarginate.

Length: $3\frac{7}{8}$ mill.

Hab.: Kanai, Koloa (Swezey), on *Canavalia* sp.

Though this form is not likely to be endemic, I have not been able to identify it, generically or specifically, with anything previously described.

Psallus swezeyi sp. nov.

Very close to *P. sharpianus*, but smaller, the tegminal maculations much larger, and the abdomen is black.

♀ Greenish testaceous, irregularly suffused with sanguineous, especially on the tegmina. Head and pronotum irregularly speckled with black and red, the latter with a large nebulous dark spot submedially on each side. Tegmina with large blackish spots, especially down the corium, cuneus hyaline, its margins pale ruddy; veins of membrane reddish orange, medially suffused with blackish. First, third and fourth segments of antennae blackish, the second yellowish. Under-side blackish, legs testaceous, fore and middle femora sparsely marked with dark, hind femora with large purplish brown spots so that the whole femur appears dark, except the base and apex. Tibial hairs and the points they spring from black. Pubescence golden yellowish, hairs black. The tegmina are more rounded exteriorly than in *P. sharpianus*. Ovipositor apically orange.

Length: $2\frac{1}{2}$ mill.

Hab.: Oahu, Waianae Mountains, 2,000 feet. (Swezey).

Fulvius peregrinator sp. nov.

This Mirid is allied structurally to *F. oxycarenoides*, but has a very different general appearance.

♂ ♀. Fulvous, the vertex with 2 longitudinal stripes, which continue onto and down the pronotum, which has also lateral stripes of the same color, the 4 continuing more obscurely onto the fore margin of the scutellum, which is otherwise black. The upper surface (at rest; except the membrane) with short, pale golden pubescence. Antennae and labium pale fulvous, apical third of the second segment paler, third and fourth segments fuscous. Tegmina dark testaceous basally, the rest dark fuscous (with a fulvous tint partly in the ♀, the ♂ being paler and more obscure); apical angle of the corium next the cuneus orange. Cuneus black, fuscous interiorly. Veins of the lower wings almost colorless. Beneath blackish, or very dark piceous, the incisures pale partly, femora dark piceous, apices of fore and middle femora paler, the rest of the legs fusco-testaceous. Vertex triangular in front of the eyes, about as long there as behind it, scarcely wider between the eyes than the eyes together. Beneath, a single eye is about as wide as the gula. First segment of antennae extends for about half its length beyond the apex of the vertex, second about two and one-third longer than the first and about equal to the base of the pronotum, third and fourth short. The fore margin of the pronotum is roundly emargi-

nate, lateral margins concavely widening towards the base, very rapidly near it, the postero-lateral angles prominent and acute (the tips a little blunt); hind margin about twice as wide as the fore; calli insignificant. First segment of the labium not quite extending to the base of the head.

Length: ♂ $2\frac{1}{2}$ mill.; ♀ $3\frac{1}{2}$ -4 mill.

Hab.: Kauai, Lihue and Kealia (Terry); Hawaii, Papai-kou, Honokaa and Honoum (Swezey).

Found on banana trash (Terry) and in bored sugar-cane (Swezey). The species, which is of course not endemic, is probably predaceous.

Thriphleps pumilio Champion.

1900, B. C. A. Het. II, 326 and 327.

Comparatively recently, an Anthocorid new to these islands, but evidently not endemic, has been found around Honolulu. It agrees almost perfectly with Champion's description, which, slightly altered in phraseology, runs as follows:

"Ovate, sparsely pubescent, shining nigropiceous above, paler beneath; the anteocular portion of the head, the labium, antennae, and legs testaceous; the tegmina testaceous, with the cuneus slightly infusate, the membrane pale; the venter ferruginous. Head short and broad, the eyes very large; antennae moderately long, 2nd segment stouter and much longer than the 3rd. Pronotum with the sides obliquely converging from the base, the anterior angles rounded; rugosely punctured, the hind lobe depressed on the disk in front, the fore lobe almost smooth behind. Scutellum transversely rugulose. Tegmina with the clavus sparsely and very coarsely, and the other parts closely and finely punctured. Orifice of the stink-glands very long and curved.

Length: ♂ 1 2-3 mill.

Hab.: Guatemala, near the city (Champion).

One specimen. Allied to *T. tripunctatus*, but smaller, the pronotum less rugose, the clavus sparsely punctured; the corium and embolium much more finely punctate."

The Hawaiian examples differ only by the fact that the head is, in mature individuals, entirely dark piecous.

(b) REMARKS ON SAY'S HEMIPTEROUS GENERA AND SUBGENERA.

In the Hemiptera, Say proposed only two genera and two subgenera, of which *Asera* and *Nerthra* are well known.

Pamera was instituted expressly to replace the preoccupied "*Pachymera*" (sic!) of Lepeletier and Serville.* The type will then be, not any of the 8 species newly described by Say, but one of the original species of *Pachymerus*. As, to the best of my knowledge, no type has been thus selected, I now choose *pedester* Linne. *Aphanus* Laporte, published later in the same year (i. e. 1832), was also erected to supersede the preoccupied *Pachymerus*, and I have previously shown the type to be *pedester*. *Ptochiomera* was erected as a subgenus of *Pamera*, but was not described.

(c) ON SOME FORGOTTEN COCCID NAMES.

Goeze's "Entomologische Beytrage II" (1778) was overlooked by Mrs. Fernald; many of the new names were invalid, being trinomial, but the following demand recognition:

1. *Tachardia (Coccus) GUMMILACCAE* Goeze = *lacca* (Kerr 1782).
2. *Eulecanium (Coccus) LIRIODENDRON* Goeze = *liriodendri* (Gmelin 1789).
3. "*Coccus*" *clematitis* Goeze = No. 1458 Fernald's Cat.
4. *Gossyparia spuria* (Modeer 1778) = *Coccus ulmilanatus* Goeze 1778. I do not know which has priority. N. B.: Goeze's name was not divided.
5. *Lepidosaphes ulmi* (Linne) = *Coccus conchiformis* Goeze 1778.
6. *Pulvinaria carpini* (Linne) = *Coccus mespili* Goeze 1778.
7. *Coccus rufus* Schrank 1776 is (see. Goeze) probably an Acarid!
8. *C. aquaticus* Goeze 1778 is probably the egg of a Hirudiniid!

(d) NEW NAMES.

The following new names are necessary:

1. *Oncocephalus semiramide* nom. nov. = || *lineatus* (Walker).
2. *Varus legionicus* nom. nov. = || *varius* (Walker).

* The original Lepeleterian spelling was "*Pachymerus*"; "*Pachymera*" was a laps. cal. of Bethold's in 1827.

3. *Sminthus anniversarius* nom. nov. = || *unifasciatus* (Walker).
4. *Coranus siva* nom. nov. = || *obscurus* (Kirby).
5. *Boisea* nov. subg. (of *Leptocoris*) for *L. vittata*. The isolation of a single species of this genus in America is very remarkable; the new subgenus differs from all the others by the striking coloration, the upper surface being piceous, the margins and keels of the pronotum, the tegminal venation, etc., sanguineous. Closely allied to the subg. *Tynotoma*, it differs by the slight margination of the pronotum, etc.

(e) ON NABIDÆ.

In the last number of these "Proceedings" (pp. 49-69), I gave a fairly complete account of all that was known of the Biology of the Nabidæ. I had, however, overlooked three references, which, as a matter of convenience, I now add:

In 1855 ("Ueber die Micropyle und den feinern Bau der Schalenhaut bei den Insekteneiern," in Muller's Archiv. 149), Lenekart described and figured (Pl. 8. f. 19), the micropylar end of the egg of "*Nabis brachypterus*," a species which he did not describe, and which has not been dealt with since.

In 1907 ("Predaceous Insects and Their Prey," in T. E. S. London, for 1906, 405), Poulton recorded a nymph of *Reduviolus myrmicoides* (under the name of *Nabis lativentris*), preying on the Mirid bug *Plagiognathus arbustorum*, and an adult of *R. limbatus* preying on the Dipteron *Opomyza germinationis*.

Reduviolus is also recorded, in a paper I have not seen, as one of the enemies of the Tetigoniid *Macrosteles sernotatus* (otherwise known as *Jassus* and *Cicadula*), which is a pest on cereals, grasses, etc. (cf. Jungner, 1906, Arb. deutsch. Landwirtschafts-ges. XV, p. ?).

A Preliminary List of the Hemiptera of California, pt. 1.

BY G. W. KIRKALDY.

For my material I owe thanks to Messrs. Giffard, Ehrhorn, and Fullaway of Honolulu, and to Mr. F. X. Williams of San Francisco. I propose to give a full bibliography at the end; at